

Region 4 Laboratory Services and Applied Science Division 980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 21-0217

Project: 21-0217, Piney Point - Phase 1 - Reported by Floyd Wellborn

April 12, 2021

MEMORANDUM

SUBJECT: FINAL Analytical Report

Project: 21-0217, Piney Point - Phase 1

FROM: Floyd Wellborn

LSB Inorganic Chemistry Section Chief

THRU: Sandra Aker, Chief

Laboratory Services Branch

TO: Floyd Wellborn

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
Classical/Nutrient Analyses (CNA)		
Ammonia as N	EPA 350.1 (Water)	ISO
Ammonia/TKN	EPA 351.2 (Water)	ISO
Nitrate and/or Nitrite	EPA 353.2 (Water)	ISO/DW
Phosphorous	EPA 365.1 (Water)	ISO
Solids	USGS I-3765-85 (Water)	ISO
Physical Properties (PHYSP)		
Turbidity of Preserved Metals Samples	EPA 180.1 (Water)	NR



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Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.

cc: Nardina Turner



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SAMPLES INCLUDED IN THIS REPORT

Project: 21-0217, Piney Point - Phase 1

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
NW. Ditch	E211509-01	Saline Water	4/8/21 10:51	4/9/21 10:50
Decant Outfall	E211509-02	Saline Water	4/8/21 11:52	4/9/21 10:50



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DATA QUALIFIER DEFINITIONS

- J The identification of the analyte is acceptable; the reported value is an estimate.
- Q-2 Result greater than MDL but less than MRL.

ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

- MDL Method Detection Limit The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.
- MRL Minimum Reporting Limit Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.
- TIC Tentatively Identified Compound An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Laboratories.

Refer to the certificate and scope of accreditation FT-0330 at: http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd

NR Not accredited for this test.

DW Accredited for conformance with ISO/IEC 17025:2017 and testing elements in the Fifth Edition of the Manual for the Certification of Laboratories Analyzing Drinking Water, EPA 815-R-05-004, 2005.

Refer to the certificate and scope of accreditation AT-2628 at: http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd

ISO/DW Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Labs, and conformance with ISO/IEC 17025:2017 and testing elements in the Manual for the Certification of Laboratories Analyzing Drinking Water.



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Classical/Nutrient Analyses

Project: 21-0217, Piney Point - Phase 1

Sample ID: NW. Ditch
Lab ID: E211509-01
Station ID: Matrix: Saline Water

Date Collected: 4/8/21 10:51

CAS Number	Analyte	Results Qualifiers	Units	MDL MRL Prepared Analy	zed Method
7664-41-7	Ammonia as N	210	mg/L	1.2 4/99/21 4/09/ 5.0 12:16 16:4	EPA 350.1
E17148461	Total Kjeldahl Nitrogen	210	mg/L	4.3 4/10/21 4/11/. 5.0 9:45 12:2	²¹ EPA 351.2
E701177	Nitrate/Nitrite as N	0.014 J, Q-2	mg/L	0.0093 4/10/21 4/10/ 0.050 10/15 20/0	²¹ 6 EPA 353 2
14265-44-2	Orthophosphate as P	140	mg/L	1.9 4/09/21 4/09/2 5.0 13:16 16:1	21 8 EPA 365.1
7723-14-0	Total Phosphorus	140	mg/L	2.1 4/1/21 4/1/ 5.0 10:57 12:0	²¹ EPA 365.1
E1642818	Total Suspended Solids	32	mg/L	4/09/21 4/12// 5.0 12:13 9:24	²¹ USGS I-3765-85



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Physical Properties

Project: 21-0217, Piney Point - Phase 1

Sample ID: NW. Ditch
Lab ID: E211509-01
Station ID: Matrix: Saline Water

Date Collected: 4/8/21 10:51

CAS Number Analyte	Results Qualifiers	Units	MDL MRL Prepared Analyzed Method
E1640507 Turbidity	21	NTU	4/09/21 4/09/21 EPA 180 I



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Classical/Nutrient Analyses

Project: 21-0217, Piney Point - Phase 1

Sample ID: Decant Outfall Lab ID: E211509-02
Station ID: Matrix: Saline Water

Date Collected: 4/8/21 11:52

CAS Number	Analyte	Results Qualifiers	Units	MDL MRL Prepared Analyzed Method
7664-41-7	Ammonia as N	200	mg/L	1.2 4/09/21 4/09/21 EPA 350.1 5.0 12:16 16:42 EPA 350.1
E17148461	Total Kjeldahl Nitrogen	200	mg/L	4.3 4/10/21 4/11/21 5.0 9:45 12:25 EPA 351.2
E701177	Nitrate/Nitrite as N	0.021 J. Q-2	mg/L	0.0093 4/19/21 4/10/21 EPA 353.2 0.050 10:15 20:96 EPA 353.2
14265-44-2	Orthophosphate as P	140	mg/L	1.9 4/09/21 4/09/21 EPA 365.1
7723-14-0	Total Phosphorus	150	mg/L	2.1 4/11/21 4/11/21 EPA 365.1 5.0 10:57 12:05
E1642818	Total Suspended Solids	20	mg/L	4/09/21 4/12/21 USGS I-3765-85 5.0 12:13 9:24



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Physical Properties

Project: 21-0217, Piney Point - Phase 1

Sample ID: <u>Decant Outfall</u>
Station ID: Lab ID: <u>E211509-02</u>
Matrix: Saline Water

Date Collected: 4/8/21 11:52

CAS Number Analyte	Results Qualifiers	Units	MDL MRL Prepared Analyzed Method
E1640507 Turbidity	2:2	NIU	4/09/21 4/09/21 EPA 180.1 1.0 13:09 13:30



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		Reporting			Source		%REC		RPD	
Analyte	Result	Limit	Units	Spike Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2104023 - C 351.2 TKN										
Blank (2104023-BLK1)				Prepared: (04/10/21 Ar	nalyzed: 04	/11/21			
EPA 351.2										
Total Kjeldahl Nitrogen	U	0.050	mg/L							U
LCS (2104023-BS1)				Prepared: (04/10/21 Ar	nalyzed: 04	/11/21			
EPA 351.2										
Total Kjeldahl Nitrogen	1.7670	0.050	mg/L	1.7500		101	90-110			
Matrix Spike (2104023-MS1)	Sourc	ce: E211509-	02	Prepared: (04/10/21 Ar	nalyzed: 04	/11/21			
EPA 351.2										
Total Kjeldahl Nitrogen	297.80	10	mg/L	100.00	196.40	101	90-110			
Matrix Spike Dup (2104023-MSD1)	Sourc	ce: E211509-	02	Prepared: (04/10/21 Ar	nalyzed: 04	/11/21			
EPA 351.2										
Total Kjeldahl Nitrogen	307.00	10	mg/L	100.00	196.40	111	90-110	3.04	20	QM-2
MRL Verification (2104023-PS1)				Prepared: (04/10/21 Ar	nalyzed: 04	/11/21			
EPA 351.2										
Total Kjeldahl Nitrogen	0.066000	0.050	mg/L	0.050000		132	70-130			MRL-2
Batch 2104024 - C 350.1 Ammonia										
Blank (2104024-BLK1)				Prepared &	: Analyzed:	04/09/21				
EPA 350.1										
Ammonia as N	U	0.050	mg/L							U
LCS (2104024-BS1)				Prepared &	: Analyzed:	04/09/21				
EPA 350.1										
Ammonia as N	0.96800	0.050	mg/L	1.0000		96.8	90-110			
Matrix Spike (2104024-MS1)	Sourc	ce: E211509-	02	Prepared &	: Analyzed:	04/09/21				
EPA 350.1										
Ammonia as N	298.20	5.0	mg/L	100.00	195.30	103	90-110			
Matrix Spike Dup (2104024-MSD1)	Sourc	ce: E211509-	02	Prepared &	: Analyzed:	04/09/21				
EPA 350.1										
Ammonia as N	299.10	5.0	mg/L	100.00	195.30	104	90-110	0.301	10	



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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2104024 - C 350.1 Ammonia										
MRL Verification (2104024-PS1)				Prepared &	Analyzed:	04/09/21				
EPA 350.1										
Ammonia as N	0.041000	0.050	mg/L	0.050000		82.0	70-130			MRL-2
Batch 2104030 - C 365.1 Ortho Phos										
Blank (2104030-BLK1)				Prepared &	z Analyzed:	04/09/21				
EPA 365.1										
Orthophosphate as P	U	0.010	mg/L							U
LCS (2104030-BS1)				Prepared &	z Analyzed:	04/09/21				
EPA 365.1										
Orthophosphate as P	0.50100	0.010	mg/L	0.50050		100	90-110			
Matrix Spike (2104030-MS1)	Sou	rce: E211509-	02	Prepared & Analyzed: 04/09/21						
EPA 365.1										
Orthophosphate as P	0.78700		mg/L	0.50050	0.28000	101	90-110			
Matrix Spike Dup (2104030-MSD1)	Sou	rce: E211509-	02	Prepared & Analyzed: 04/09/21						
EPA 365.1										
Orthophosphate as P	0.78000		mg/L	0.50050	0.28000	99.9	90-110		10	
MRL Verification (2104030-PS1)				Prepared &	z Analyzed:	04/09/21				
EPA 365.1 Orthophosphate as P	0.011000	0.010	mg/L	0.010000		110	70-130			MRL-2
Batch 2104033 - C 2540 Solids										
Blank (2104033-BLK1)				Prepared: 0	04/09/21 Aı	nalyzed: 04	/12/21			
USGS I-3765-85										
Total Suspended Solids	U	5.0	mg/L							U
LCS (2104033-BS1)				Prepared: ()4/09/21 Aı	nalyzed: 04	1/12/21			
USGS I-3765-85										
Total Suspended Solids	90.700	5.0	mg/L	100.00		90.7	77.1-110			



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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2104033 - C 2540 Solids										
LCS Dup (2104033-BSD1)				Prepared: 0	04/09/21 Ar	nalyzed: 04	1/12/21			
USGS I-3765-85										
Total Suspended Solids	90.000	5.0	mg/L	100.00		90.0	77.1-110	0.775	10	
Duplicate (2104033-DUP1)	Sour	Source: E211509-02			04/09/21 Ar	nalyzed: 04	1/12/21			
USGS I-3765-85										
Total Suspended Solids	21.500	5.0	mg/L		19.900			7.73	10	
MRL Verification (2104033-PS1)				Prepared: 0						
USGS I-3765-85										
Total Suspended Solids	3.3000	5.0	mg/L	5.0000		66.0	57.1-130			MRL-2, U
Batch 2104034 - C 353.2 NO3-NO2										
Blank (2104034-BLK1)				Prepared &	Analyzed:	04/10/21				
EPA 353.2										
Nitrate/Nitrite as N	U	0.050	mg/L							U
LCS (2104034-BS1)		Prepared &	Analyzed:	04/10/21						
EPA 353.2										
Nitrate/Nitrite as N	0.50170	0.050	mg/L	0.50150		100	90-110			
Matrix Spike (2104034-MS1)	Sour	ce: E211509-	01	Prepared &	Analyzed:	04/10/21				
EPA 353.2										
Nitrate/Nitrite as N	0.48030	0.050	mg/L	0.50150	0.013900	93.0	90-110			
Matrix Spike Dup (2104034-MSD1)	Sour	ce: E211509-	01	Prepared &	Analyzed:	04/10/21				
EPA 353.2										
Nitrate/Nitrite as N	0.49740	0.050	mg/L	0.50150	0.013900	96.4	90-110	3.50	10	
MRL Verification (2104034-PS1)		Prepared & Analyzed: 04/10/21								
EPA 353.2										
Nitrate/Nitrite as N	0.053000	0.050	mg/L	0.050000		106	70-130			MRL-2
Batch 2104035 - C 365.1 TPhos										
Blank (2104035-BLK1)	<u> </u>			Prepared &	Analyzed:	04/11/21			· · ·	
EPA 365.1										



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		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2104035 - C 365.1 TPhos										
Blank (2104035-BLK1)				Prepared &	Analyzed:	04/11/21				
Total Phosphorus	U	0.010	mg/L							U
LCS (2104035-BS1)				Prepared &	Analyzed:	04/11/21				
EPA 365.1										
Total Phosphorus	0.37800	0.010	mg/L	0.37800		100	90-110			
Matrix Spike (2104035-MS1)	Source: E211509-02		Prepared &	Prepared & Analyzed: 04/11/21						
EPA 365.1										
Total Phosphorus	145.00	5.0	mg/L	0.50050	147.00	-400	90-110			XM-1
Matrix Spike Dup (2104035-MSD1)	Sourc	Source: E211509-02			Prepared & Analyzed: 04/11/21					
EPA 365.1										
Total Phosphorus	146.50	5.0	mg/L	0.50050	147.00	-99.9	90-110	1.03	10	XM-1
MRL Verification (2104035-PS1)				Prepared &	Analyzed:	04/11/21				
EPA 365.1										
Total Phosphorus	0.010000	0.010	mg/L	0.010000		100	70-130			MRL-2
			<i>U</i> -							



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Physical Properties (PHYSP) - Quality Control US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes		
Batch 2104029 - M Turbidity												
Blank (2104029-BLK1)				Prepared &	: Analyzed:	04/09/21						
EPA 180.1 Turbidity	U	1.0	NTU							U		
Blank (2104029-BLK2)				Prepared &	: Analyzed:	04/09/21						
EPA 180.1 Turbidity	U	1.0	NTU							υ		
LCS (2104029-BS1)				Prepared &	: Analyzed:	04/09/21						
EPA 180.1 Turbidity	10.300	1.0	NTU	10.000		103	90-110					
LCS (2104029-BS2)				Prepared &	: Analyzed:	04/09/21						
EPA 180.1 Turbidity	10.300	1.0	NTU	10.000		103	90-110					
LCS (2104029-BS3)	Prepared & Analyzed: 04/09/21											
EPA 180.1 Turbidity	10.400	1.0	NTU	10.000		104	90-110					
LCS (2104029-BS4)				Prepared &	: Analyzed:	04/09/21						
EPA 180.1 Turbidity	10.400	1.0	NTU	10.000		104	90-110					
Reference (2104029-SRM1)				Prepared &	: Analyzed:	04/09/21						
EPA 180.1 Turbidity	1.4800	1.0	NTU	1.4800		100	0-200					
Reference (2104029-SRM2)				Prepared &	: Analyzed:	04/09/21						
EPA 180.1 Turbidity	16.100	1.0	NTU	16.100		100	0-200					
Reference (2104029-SRM3)				Prepared &	: Analyzed:	04/09/21						
EPA 180.1 Turbidity	1.5000	1.0	NTU	1.4800		101	0-200					
Reference (2104029-SRM4)				Prepared &	Analyzed:	04/09/21						



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Physical Properties (PHYSP) - Quality Control US-EPA, Region 4, LSASD

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 2104029 - M Turbidity	
Reference (2104029-SRM4)	Prepared & Analyzed: 04/09/21

 EPA 180.1

 Turbidity
 16.300
 1.0
 NTU
 16.100
 101
 0-200



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Notes and Definitions for QC Samples

U The analyte was not detected at or above the reporting limit.

MRL-2 MRL verification for Non-Potable Water matrix

QM-2 Matrix Spike Recovery greater than method control limits

XM-1 Sample background/spike ratio higher than method evaluation criteria